100110671-1
Kevin T. Lefebvre, Howard D. Stroyan and Samuel G. Sands
Method, Node, and Network for Compositing a Three-Dimensional Stereo
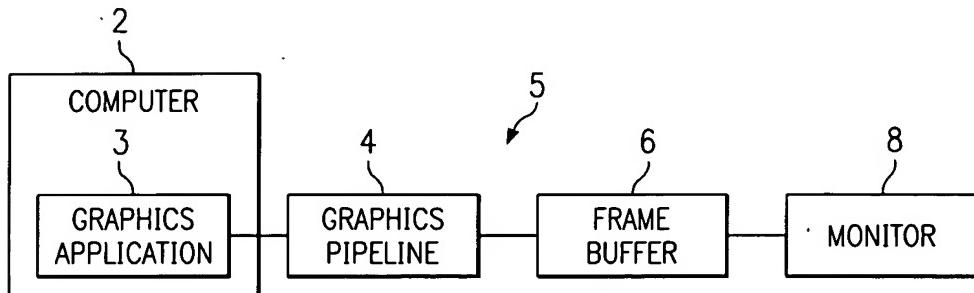Image from an Image Generated from a Non-Stereo Application
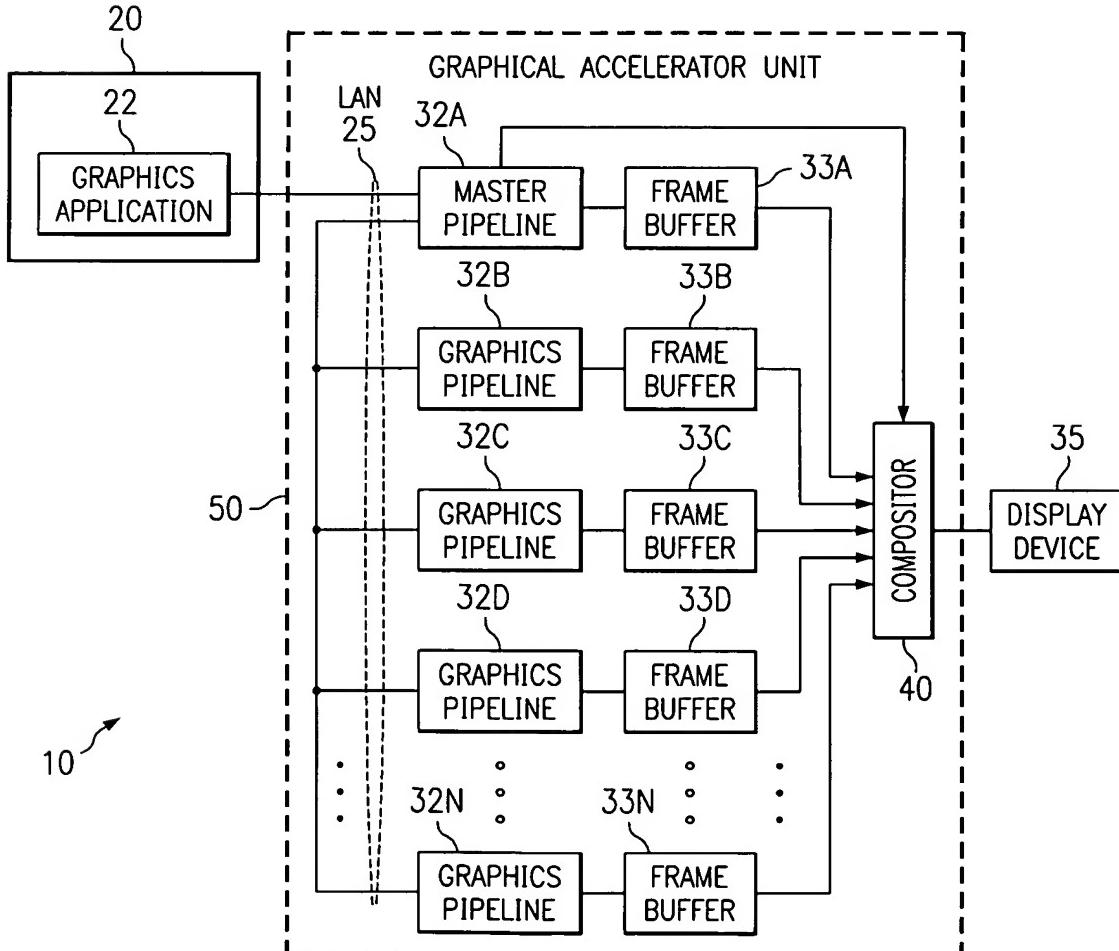1/8

FIG. 1

FIG. 2

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20

COMPOSITOR

22	50
GRAPHICS APPLICATION	OS
GLX	

~140

85

55

PROCESSING ELEMENT

60

LOCAL INTERFACE

65 — INPUT DEVICE

70 — OUTPUT DEVICE

75 — NETWORK INTERFACE

80 — DISK

FIG. 3

140

X SERVER

166 — X SERVER DISPATCH

167 — DIX | GLX — 168

DDX — 169

162

SLAVE CONTROLLER

161

32A

155

PROCESSING ELEMENT

160

LOCAL INTERFACE

165 — INPUT DEVICE

170 — OUTPUT DEVICE

175 — NETWORK INTERFACE

180 — DISK

185 — PIPELINE HARDWARE

FIG. 4

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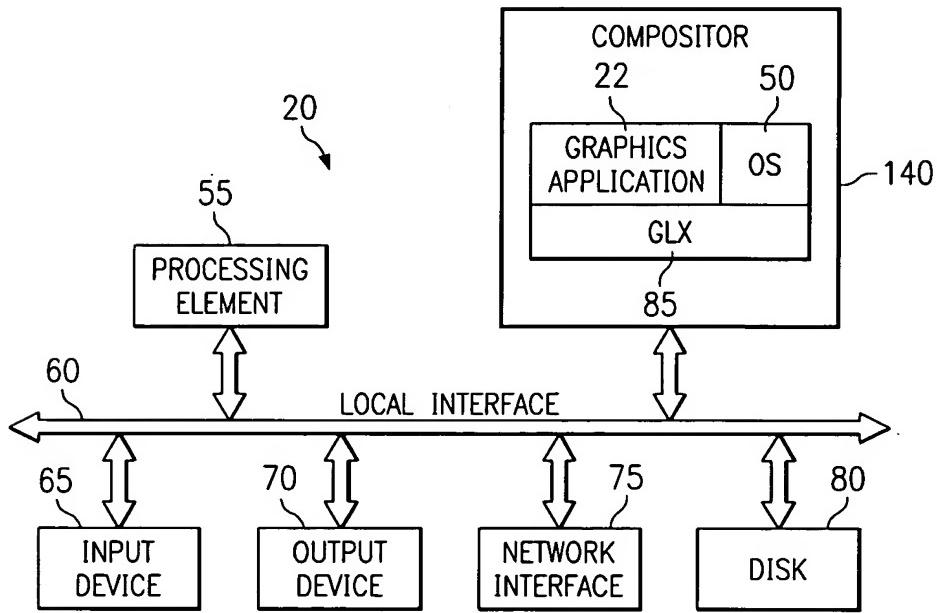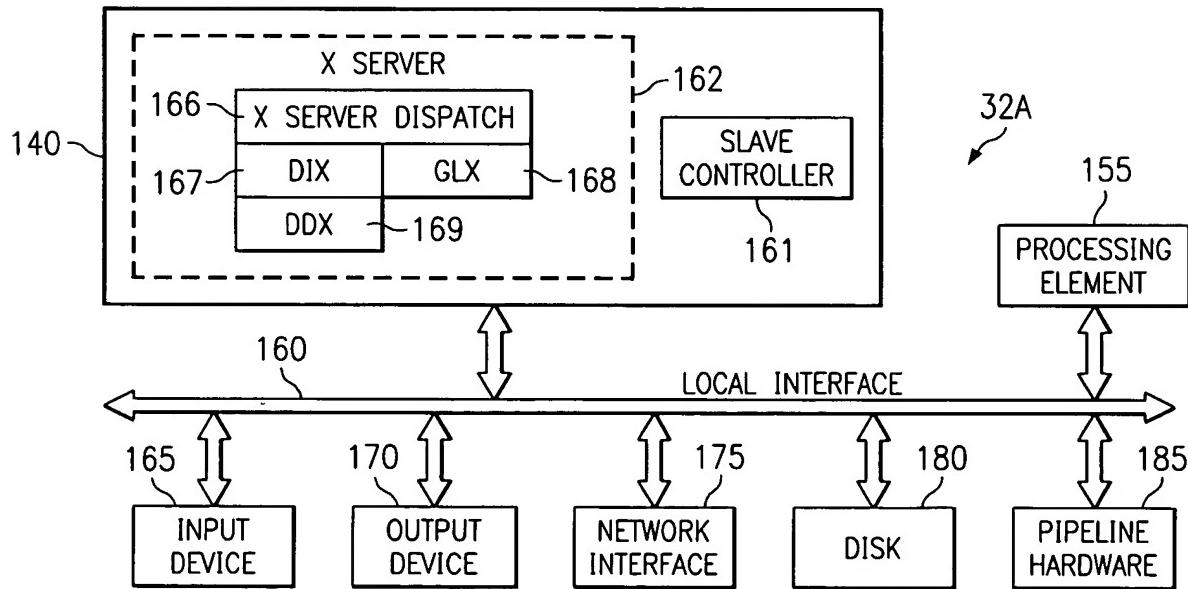Image from an Image Generated from a Non-Stereo Application
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FIG. 5

32B–32N

- X SERVER **202**
  - X SERVER DISPATCH **208**
  - DIX **209** | GLX **210**
  - DDX **211**
- OGL DAEMON **203**
  - OGL DISPATCH **215**
  - STEREO TRANSFORM **218** | OGLDI **216** / OGLDD **217**
- **206**

PROCESSING ELEMENT **255**

260 LOCAL INTERFACE

INPUT DEVICE **265**
OUTPUT DEVICE **270**
NETWORK INTERFACE **275**
DISK **280**
PIPELINE HARDWARE **285**

FIG. 8

CLIENT
GRAPHICS APPLICATION **22**
20

MASTER PIPELINE **32A** → FRAME BUFFER **33A**
SLAVE PIPELINE **32B** → FRAME BUFFER **33B**
SLAVE PIPELINE **32C** → FRAME BUFFER **33C**
SLAVE PIPELINE **32D** → FRAME BUFFER **33D**
⋮
SLAVE PIPELINE **32N** → FRAME BUFFER **33N**

394

COMPOSITOR **140**
CONTROLLER
INPUT MECHANISM **391** / **161**
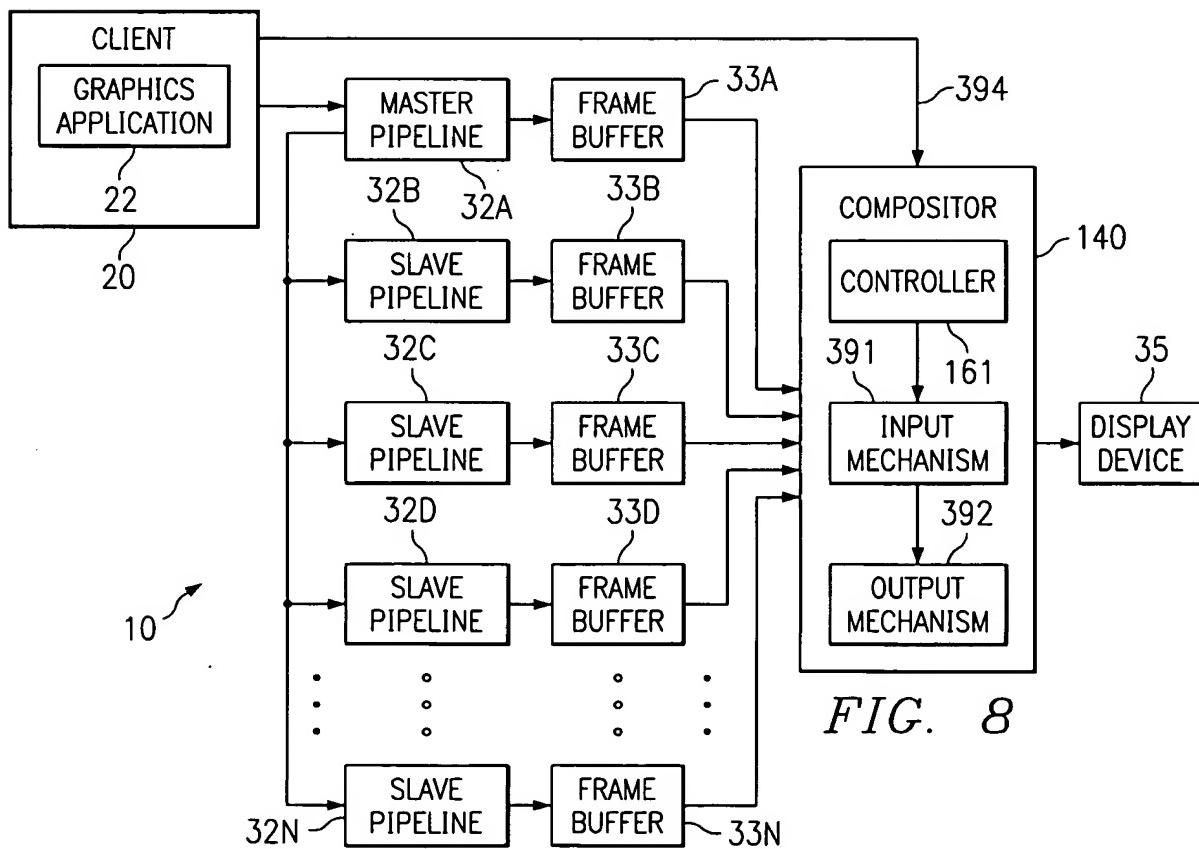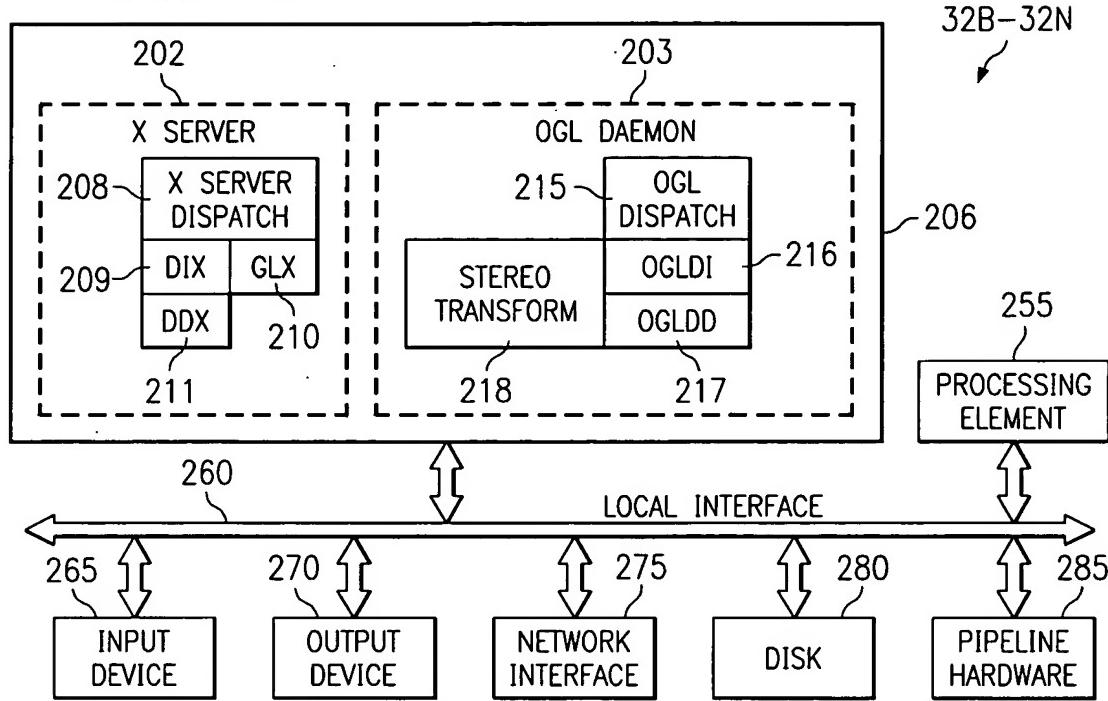OUTPUT MECHANISM **392**

DISPLAY DEVICE **35**

10

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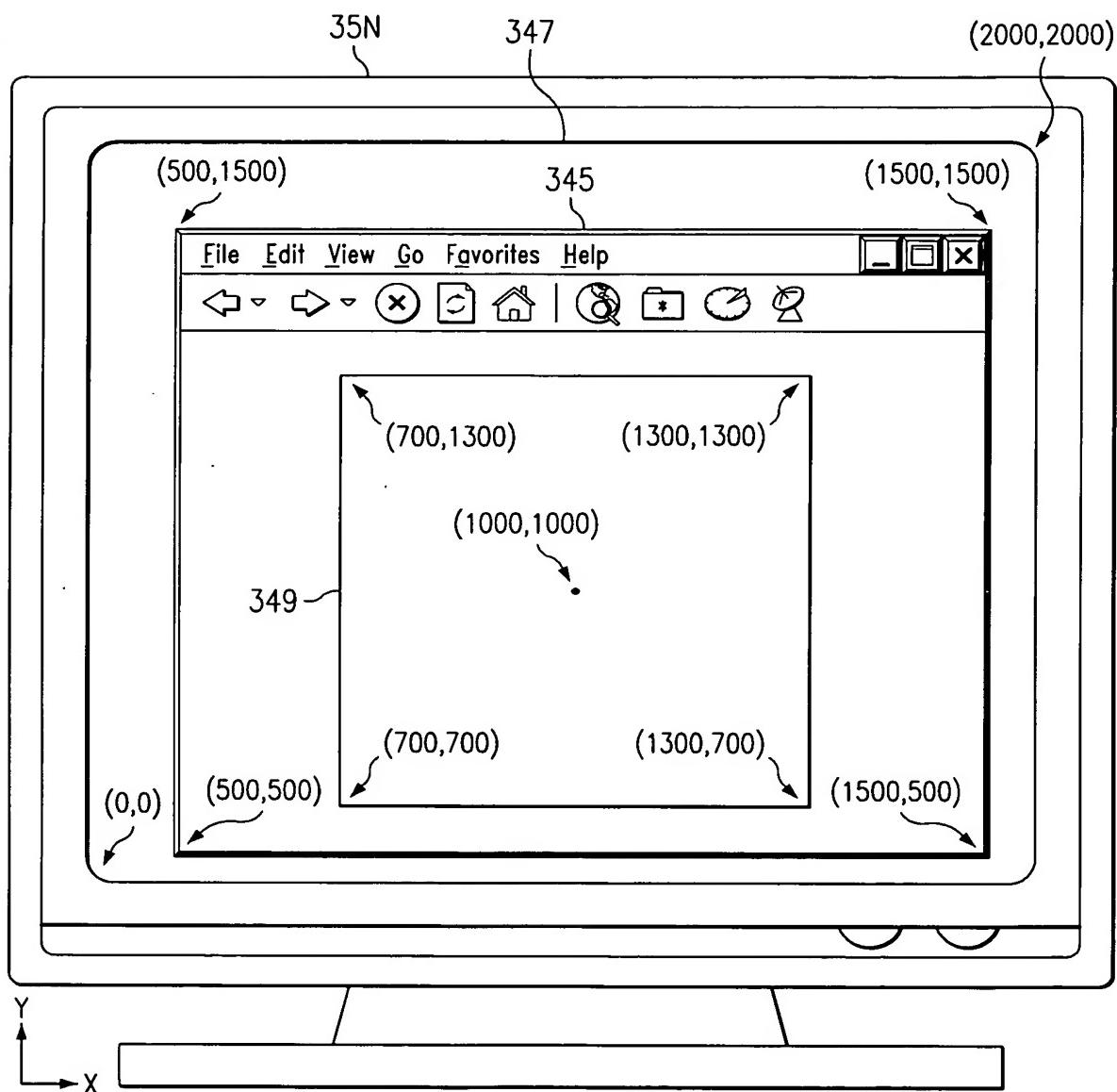4/8

35N   347   (2000,2000)

(500,1500)   345   (1500,1500)

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(700,1300)   (1300,1300)

(1000,1000)

349

(700,700)   (1300,700)

(0,0) (500,500)   (1500,500)

Y
X

FIG. 6

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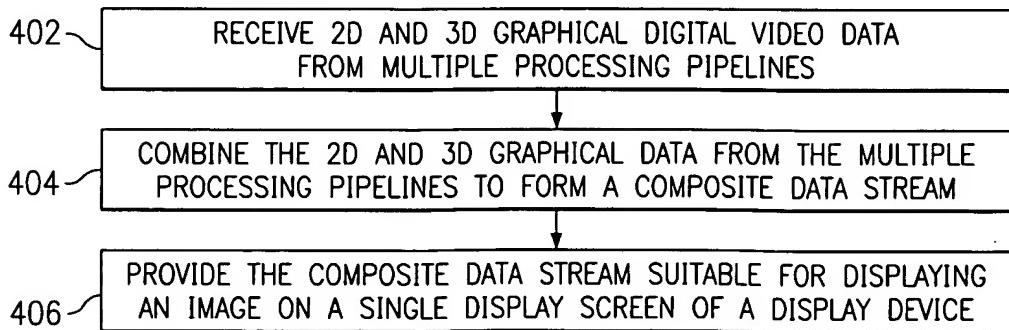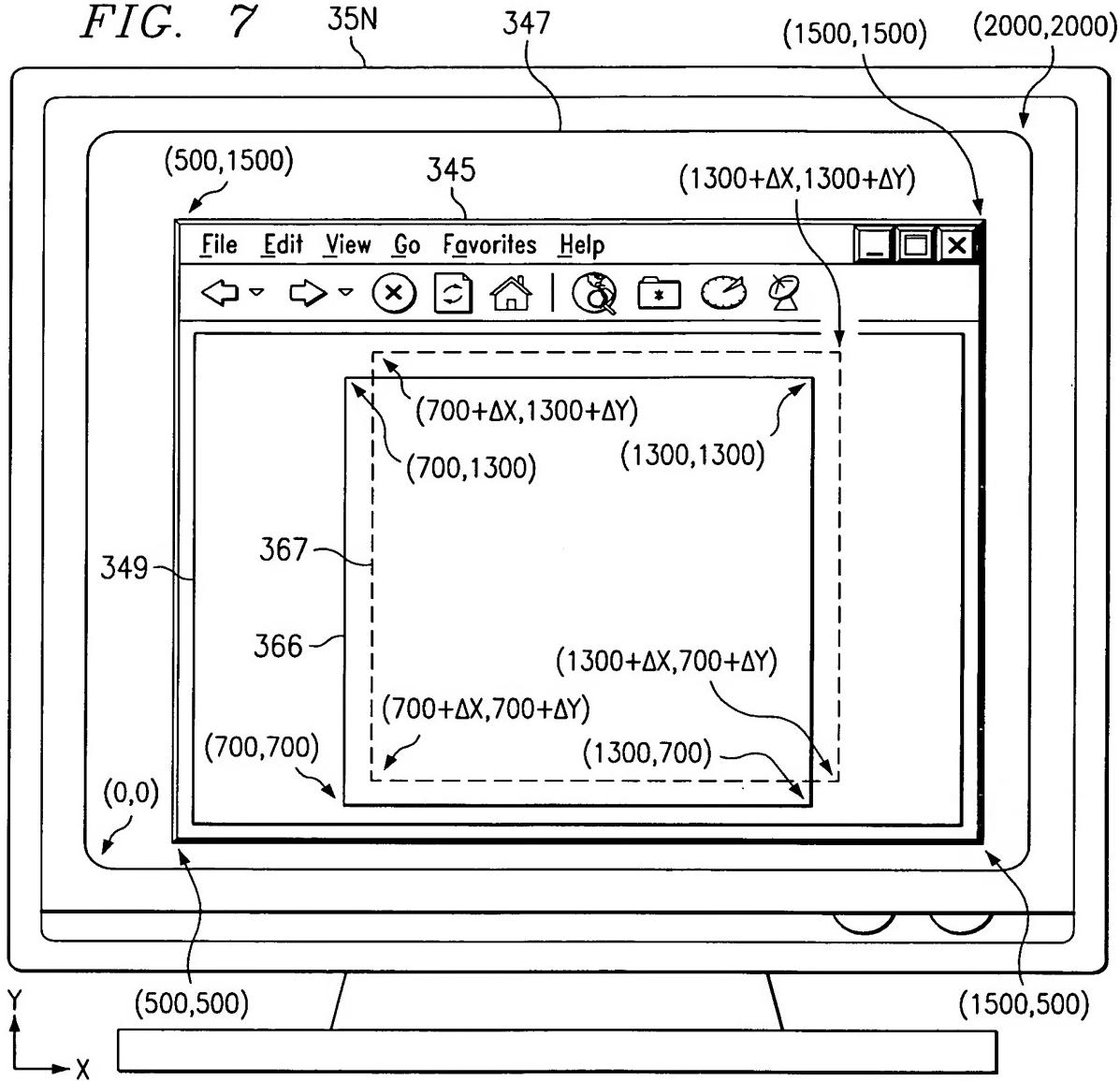
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FIG. 7

35N   347   (1500,1500)   (2000,2000)

(500,1500)   345   (1300+ΔX,1300+ΔY)

File   Edit   View   Go   Favorites   Help

(700+ΔX,1300+ΔY)
(700,1300)   (1300,1300)

349   367

366   (1300+ΔX,700+ΔY)

(700+ΔX,700+ΔY)
(700,700)   (1300,700)

(0,0)

(500,500)   (1500,500)

Y
X

FIG. 9

402 — RECEIVE 2D AND 3D GRAPHICAL DIGITAL VIDEO DATA FROM MULTIPLE PROCESSING PIPELINES

404 — COMBINE THE 2D AND 3D GRAPHICAL DATA FROM THE MULTIPLE PROCESSING PIPELINES TO FORM A COMPOSITE DATA STREAM

406 — PROVIDE THE COMPOSITE DATA STREAM SUITABLE FOR DISPLAYING AN IMAGE ON A SINGLE DISPLAY SCREEN OF A DISPLAY DEVICE

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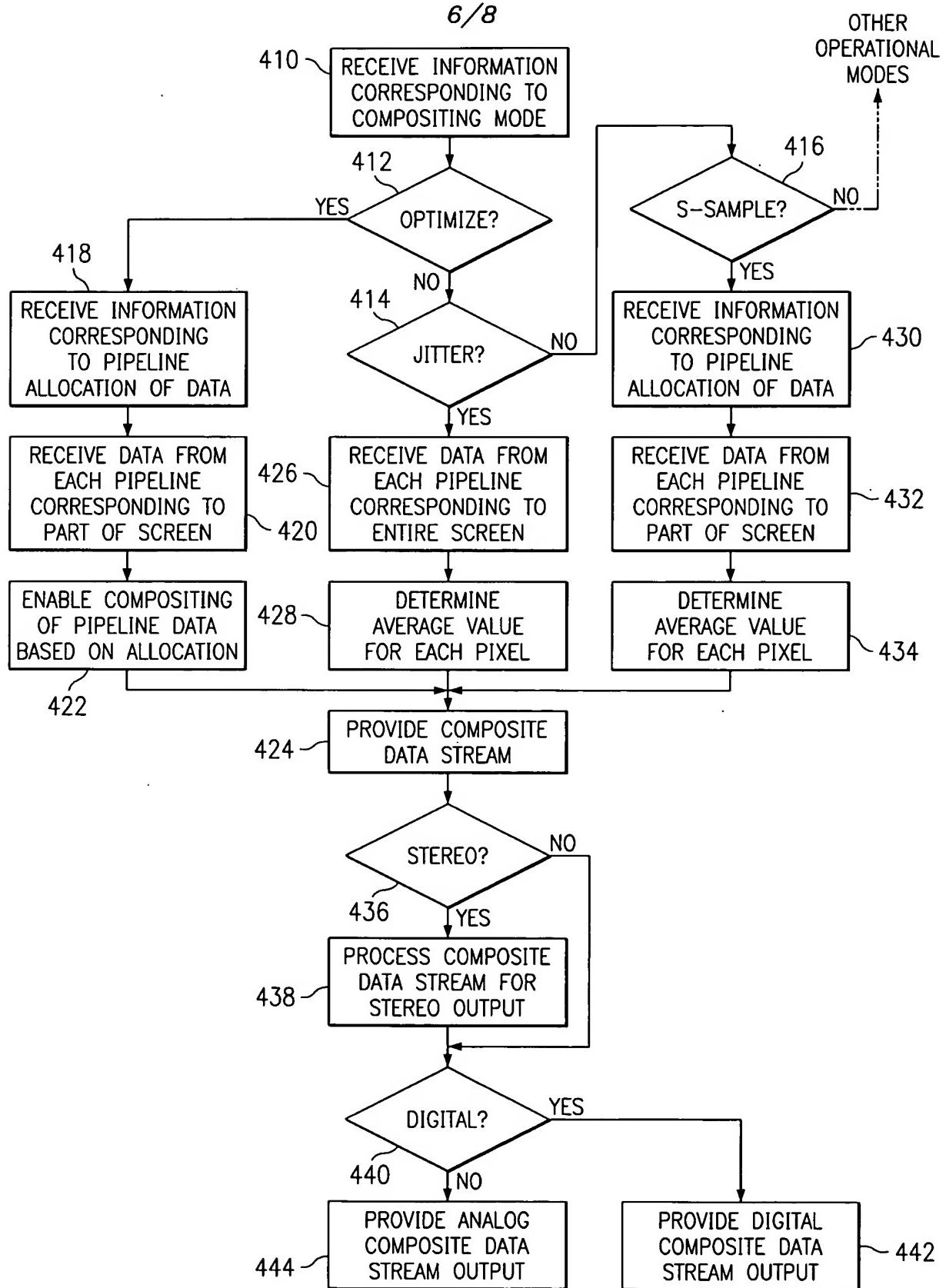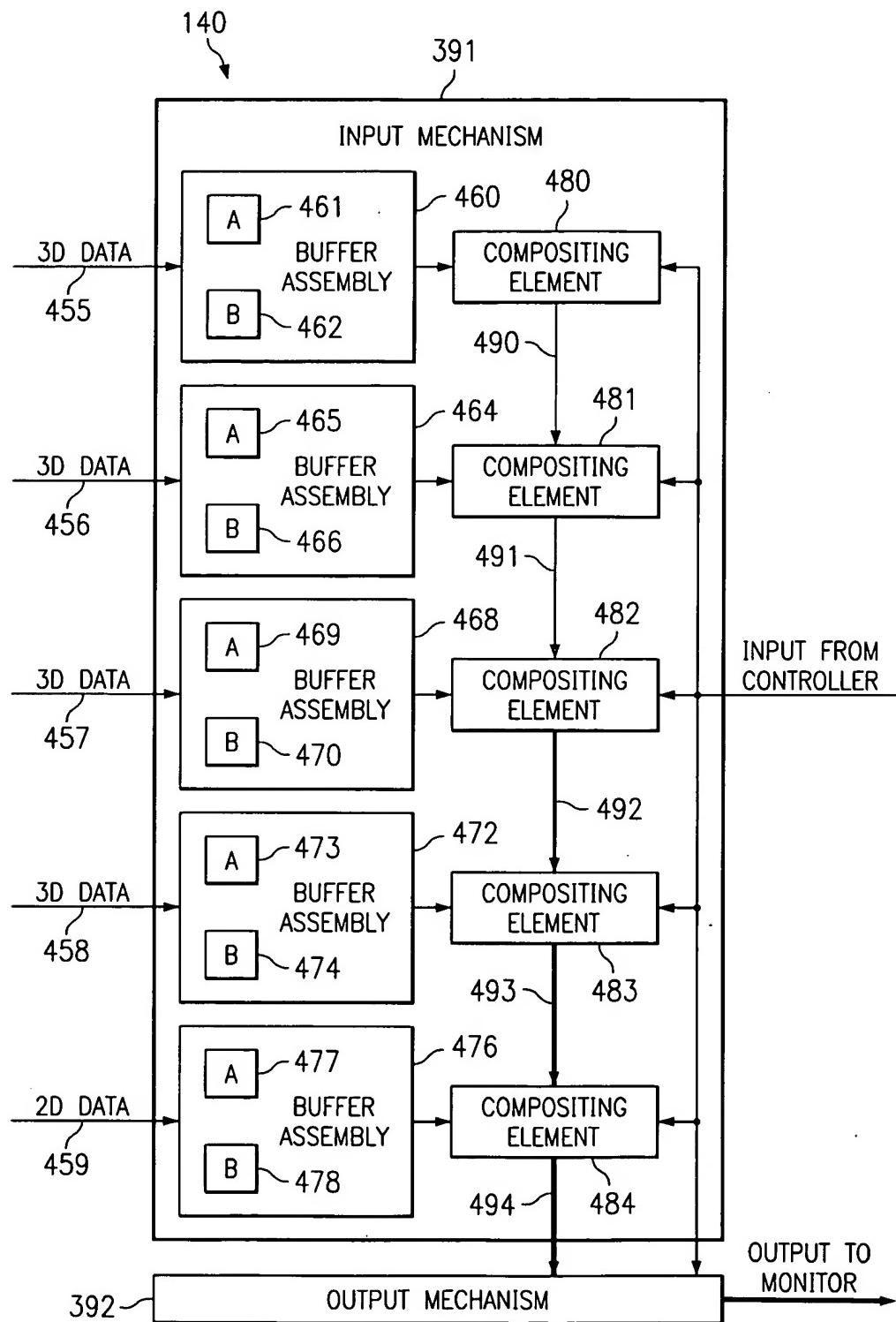Image from an Image Generated from a Non-Stereo Application
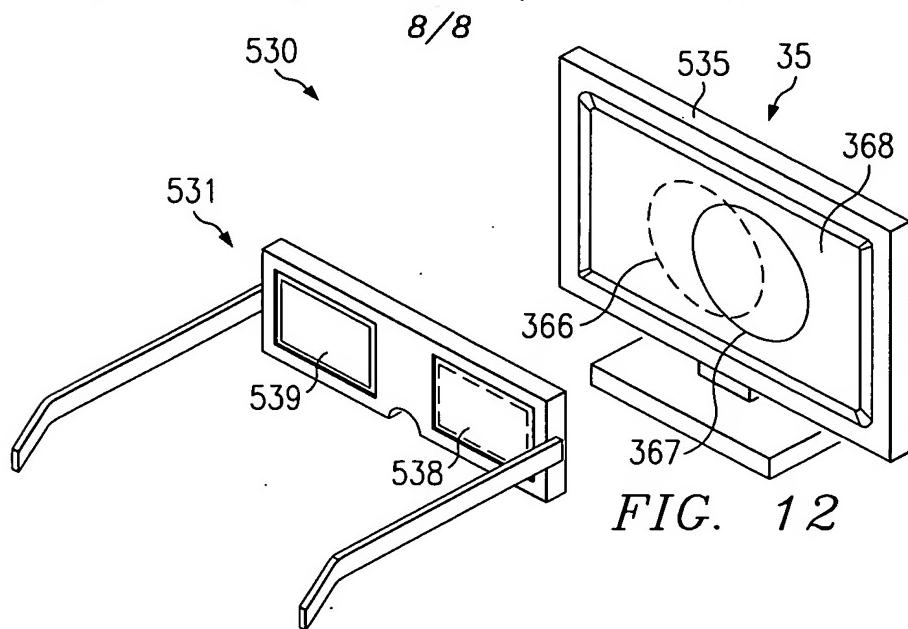
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FIG. 10

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FIG. 11

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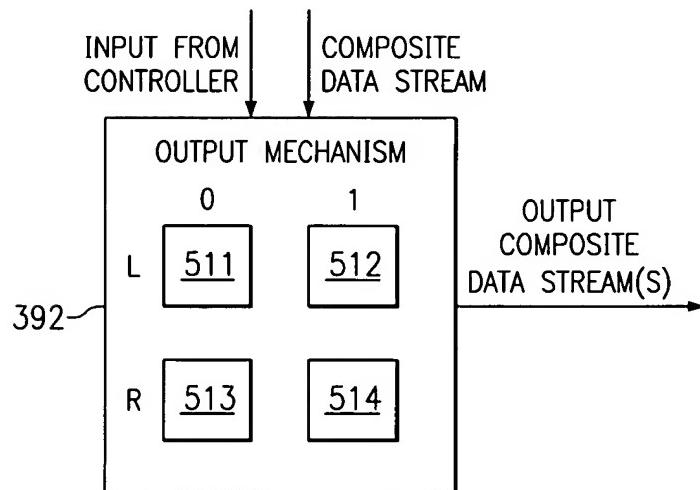Image from an Image Generated from a Non-Stereo Application
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FIG. 12

FIG. 13

FRAME BUFFER SEQUENCE	0L	0R	1L	1R
IMAGE SEQUENCE	1		2	

FIG. 14